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David A. Biro

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05/13/2009

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NEW YORK, NY 10036-2714

EXAMINER

ROBINSON, CHANCEITY N

ART UNIT

PAPER NUMBER

1795

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,336	<b>Applicant(s)</b> BIRO ET AL.	
	<b>Examiner</b> CHANCEITY N. ROBINSON	<b>Art Unit</b> 1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

1. The Applicant's request for reconsideration filed on January 22, 2009 was received.

Claims 18-20 have been added.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on October 22, 2008.

***Claim Rejections - 35 USC § 103***

3. Claims 1 and 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohman et al (US 2003/0180507) in view of Lovin (US 5,407,708).

With respect to claims 1 and 3 -11, Ohman et al disclose a packaging laminate for a packaging carton and process of producing such packaging comprising:

- Applying a printing ink, such as an radiation-curable ink, solvent based ink or water based-ink, to the surface of the plastic coating packaging laminate (paragraph [0031] and abstract); •

- Exposing the ink with UV light (paragraph [0031]); • Applying a transparent layer of radiation-curable lacquer to the plastic coating (packaging laminate - paragraph [0032]); and • Curing the radiation-curable lacquer with UV light or electron radiation (paragraphs [0033] and [0034])

Further, the packaging laminate is a plastic laminate comprising an aluminum foil material layer (paragraph [0030]). The packaging carton is filled with contents such as food (paragraph [0036]).

However, Ohman et al fail to specifically disclose the separate exposure of the ink prior to being over coated with a transparent layer. Lovin discloses a method of printing of a substrate used in food packaging comprising: • Applying a coating of radiation-curable ink to a substrate (column 5, lines 64-66) such as a heat shrinkable, flexible webs formed of thermoplastic material; (column 5, lines 54-60) • Exposing the ink to UV radiation (column 5, line 66); • Applying a

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second coating of ink to the substrate (column 6, lines 3-6); and • Exposing or curing the ink using an electron beam radiation (column 6, lines 12-13). Lovin discloses that the partial curing step prior to applying a second layer of ink helps to prevent pick off and smearing of the ink at the subsequent print stations (column 6, lines 2-5). Further, Lovin also teaches that the use of electron beam irradiations upon final curing leads to a final product that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, it would have been obvious to one of ordinary skill within the art to apply UV radiation to the ink as disclosed by Lovin prior to applying a protective coating as disclosed by Ohman to prevent smearing of the ink and to lower the amount of photoinitiator that migrate to food in packages (column 5, lines 9-20).

4. Claims 1, 4, 5, 7, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lovin (US 5,407,708) in view of Edlein et al (US 6,528,127).

With respect to claims 1, 4, 5, 7, 8, and 11, Lovin discloses a method of printing of a substrate used in food packaging comprising: • Applying a coating of radiation-curable ink to a substrate (column 5, lines 64-66) such as a heat shrinkable web; • Exposing the ink to UV radiation (column 5, line 66); • Applying a second coating of ink to the substrate (column 6, lines 3-6); and • Exposing or curing the ink using an electron beam radiation (column 6, lines 12-13). However, Lovin fails to disclose the use of an energy-curable coating that is placed over the ink after the first UV irradiation step. Edlein et al disclose a method of printing a thermoplastic film having a radiation-cured overcoat. The overcoat is applied over the entire printed surface of the film (column 10, lines 45-47). The film acts as an overcoat that provides protection to the printed image during further treatment processes or uses (column 10, lines 47-49). Further, the film is

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transparent so that the printed image is visible (column 10, lines 50-510. By applying a coating over the ink, inks are protected through severe handling and processes. Additionally, the use of the overcoat prevents the need for the use of expensive and exotic inks as well as the tampering of handling and processing conditions (column 2, lines 32-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the use of a radiation-cured overcoat as disclosed by Edlein et al within the method of Lovin to protect the printed image as well as prevent the use of exotic inks and tampering of handling/processing conditions.

5. Claims 1, 2, 5, 6, 9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mossbrook et al (US 2005/0019533) in view of Lovin (US 5,407,708).

With respect to claims 1,2, 9 and 11-14, Mossbrook et al discloses a printed thermoplastic film with an overprint varnish as a packing material and production process comprising: •Applying a printed image to a film using a radiation curable or solvent based ink (paragraphs [0061] and [0065]);• Applying an overprint varnish to cover the printed image of the film (paragraph [0068]); • And then curing the overprint varnish with radiation energy such as UV light or electron beam radiation (paragraph [0069] and [0088]). Mossbrook et al also discloses that the printed film for packaging contains a thermoplastic material in which a product such as food may be introduced into the package and sealed (paragraph [0104]). Additionally, the package will contain less than 50 ppb of migratable solvent (paragraphs [0007] and [0008]). However, Mossbrook et al fail to disclose the curing of the ink after being applied to the thermoplastic film. Lovin discloses a method of applying radiation-curable inks to a packaging material wherein the applied ink is exposed to UV radiation after application to a substrate

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(column 5, lines 65-67). The ink is partially cured with UV light to prevent pick off and smearing of the ink (column 6, lines 2 and 3). Therefore, it would be obvious to one of ordinary skill within the art at the time of the invention to include a curing step with UV light as disclosed by Lovin et al within the production of the packing material disclosed by Mossbrook et al to prevent smearing and pick off of the printed ink applied to the thermoplastic film.

6. Claims 1, 11, 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mossbrook et al (US 2005/0019533) in view of Lovin (US 5,407,708) and in further view of Chatterjee et al (US 6,803,112).

Mossbrook et al in view of Lovin disclose a printed thermoplastic film with an overprint varnish as a packing material and production process as applied to claims 1 and 11 above. Mossbrook also discloses a solvent resistance rub test (paragraph [0092]), however, fails to disclose a solvent rub test using methyl ethyl ketone (MEK). Chatterjee et al disclose a radiation curable aqueous composition for film packaging wherein a solvent rub test is performed. The solvent test is performed on a flat surface using a solvent such as methyl ethyl ketone (MEK) and the cured film (column 7, lines 64-67). The cured film surface is rubbed repeatedly with an applicator containing the solvent with a back and forth motion. The film surface is rubbed a certain number of times to measure the resistance of the cured film. The film is considered solvent resistant when rubbed 10 or more times, or more preferably, 20 to 75 times before deterioration of the film is observed (column 8, lines 1-10). Therefore, it would have been obvious to one of ordinary skill within the art at the time of the invention to perform a solvent rub test using MEK as described by Chatterjee et al within the process and on the film of Mossbrook et al to measure the resistance of the film to a solvent.

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7. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mossbrook et al (US 2005/0019533) in view of Lovin (US 5,407,708) and in further view of Chatterjee et al (US 6,803,112) as applied to claims 1, 11, 15, 16 and 17 above.

Mossbrook et al discloses a printed thermoplastic film with an overprint varnish as a packing material and production process comprising: •Applying a printed image to a film using a radiation curable or solvent based ink (paragraphs [0061] and [0065]);• Applying an overprint varnish to cover the printed image of the film (paragraph [0068]); • And then curing the overprint varnish with radiation energy such as UV light or electron beam radiation (paragraph [0069] and [0088]).Mossbrook et al also discloses that the printed film for packaging contains a thermoplastic material in which a product such as food may be introduced into the package and sealed (paragraph [0104]). Additionally, the package will contain less than 50 ppb of migratable solvent (paragraphs [0007] and [0008]). However, Mossbrook et al fail to disclose the curing of the ink after being applied to the thermoplastic film. Lovin discloses a method of applying radiation-curable inks to a packaging material wherein the applied ink is exposed to UV radiation after application to a substrate (column 5, lines 65-67). The ink is partially cured with UV light to prevent pick off and smearing of the ink (column 6, lines 2 and 3). Therefore, it would be obvious to one of ordinary skill within the art at the time of the invention to include a curing step with UV light as disclosed by Lovin et al within the production of the packing material disclosed by Mossbrook et al to prevent smearing and pick off of the printed ink applied to the thermoplastic film.

Mossbrook et al in view of Lovin disclose a printed thermoplastic film with an overprint varnish as a packing material and production process as applied to claims 1 and 11 above.

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Mossbrook also discloses a solvent resistance rub test (paragraph [0092]), however, fails to disclose a solvent rub test using methyl ethyl ketone (MEK). Chatterjee et al disclose a radiation curable aqueous composition for film packaging wherein a solvent rub test is performed. The solvent test is performed on a flat surface using a solvent such as methyl ethyl ketone (MEK) and the cured film (column 7, lines 64-67). The cured film surface is rubbed repeatedly with an applicator containing the solvent with a back and forth motion. The film surface is rubbed a certain number of times to measure the resistance of the cured film. The film is considered solvent resistant when rubbed 10 or more times, or more preferably, 20 to 75 times before deterioration of the film is observed (column 8, lines 1-10). Therefore, it would have been obvious to one of ordinary skill within the art at the time of the invention to perform a solvent rub test using MEK as described by Chatterjee et al within the process and on the film of Mossbrook et al to measure the resistance of the film to a solvent.

### ***Response to Arguments***

8. Applicant's arguments filed 01/22/2009 have been fully considered but they are not persuasive. Applicant's principal arguments are:

*A) Two statements in the office action (on pages 2-3 and 7) recognize that the second bullet point on page 2 (exposing the ink to UV light prior to the application of the radiation-curable lacquer) is wrong. Ohman states in [0031] that a radiation curable printing ink is an ink which can be cured by radiation with UV light but does not state or suggest that such ink is cured or exposed to UV light prior to being overcoated with a transparent layer. The only sequence involving application of UV light disclosed in this*



*reference is where the radiation curable ink and radiation curable lacquer are simultaneously cured using a common UV radiation source.*

A) Examiner respectfully disagrees. Ohman teaches that the radiation curable ink is an ink which can be cured and exposed with UV light [0031 & 0033-0034]. The present invention only recites, “exposing ink to UV light (radiation) and curing the coating with UV light” in the claims. Examiner notes Ohman meets the limitations that are claimed in claims 1 and 3-11. The instant invention does not recite the limitation, “*ink is cured or exposed to UV light prior to being overcoated with a transparent layer*” as argued by the applicant. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *ink is cured or exposed to UV light prior to being overcoated with a transparent layer*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore, rejection is maintained.

*B) Both of Lovin radiation curable inks contain curable functionality.*

B) Examiner notes the instant application recites an “actinic radiation activatable liquid ink” in the claimed invention. The instant application does not recite, “the ink is substantially free of curable functionality” as argued by the applicant. Actinic radiation activatable liquid ink is broad in scope, and therefore has been examined as the following. The ink of Lovin has been cured and exposed with UV light [0031 and 0033-0034], meeting the limitation of the instant application. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. the ink is

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substantially free of curable functionality) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, rejection is maintained.

*C) There is no indication anywhere in Ohman that pick-off and smearing is a problem in that system. Accordingly, there is no reason for skilled person to combine these two references, and indeed, a particular feature of Ohman is that only a single UV curing is used, making the process efficient and extremely rapid. See [0034]. An intermediate cure is contrary to Ohman. It is respectfully submitted that the lack of reason to partially cure the first ink coupled with loss of the efficiency and speed of the Ohman process makes the combination untenable.*

C) Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Ohman et al. disclose a packaging laminate for a packaging carton (material) and process of producing such packaging (abstract). Lovin et al. disclose a printing method used in food packaging (packaging material; abstract). Ohman et al. and Lovin et al. are analogous art in the packaging material field. Examiner notes pick-off and smearing is well-known problem in the packaging material field. Further, Lovin et al. also teach that the use

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electron beam irradiations upon final curing leads to a final product that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, it would have been obvious to one of ordinary skill within the art to apply UV radiation to the ink as disclosed by Lovin prior to applying a protective coating as disclosed by Ohman to prevent smearing of the ink and to lower the amount of photoinitiator that migrate to food in packages (column 5, lines 9-20). Therefore, rejection is maintained.

*D) The rejection is based on the assertion that it would be obvious to incorporate the use of a radiation curing overcoat in the method of Lovin to protect the image made by the first ink, but the result of doing so would not be the claimed method. The resulting process would still involve the initial application of a radiation curable in which contains curable functionality. Further, there is no reason to employ the overcoat in this manner since Lovin states that the procedure disclosed therein already protects the image.*

D) Examiner respectfully disagrees. The instant application does not recite such limitation of ink without curable functionality as argued above. Both of the references are analogous art in packaging material field. Examiner notes Lovin et al. also teach final product (packaging material) that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, rejection is maintained.

*E) It should also be noted that Edlein specifically distinguishes his method from that of Lovin in column 9, pointing out that the partial curing UV step is unnecessary. This is*

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*another reason that the combination of Lovin and Edlein is inappropriate and does not teach or suggest the invention claimed in this case.*

E) Examiner respectfully disagrees. The teaching Lovin et al. in column 9 are incorporated in the reference of Edlein et al. Examiner notes the two references have another reason to be combined i.e. a flexographic arrangement as disclosed in column 9, lines 30-38. Therefore, rejection is maintained.

*F) Mossbrook fails to disclose exposure the ink to UV after being applied to the film and before overcoating. There is no teaching or suggestion in Mossbrook that the ink image is subject to pick-off and smearing, or that there is any problems with either shrinkage or the food packaging environment. This is significant because Mossbrook was clearly aware of such image damage problems after curing the overprint (see [0045]), and is making a product for use in food packaging.*

F) Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Both of the references are analogous art in packaging material field. Mossbrook et al. and Lovin et al. are analogous art in the packaging material field. Examiner notes pick-off and smearing is well-known problem in the packaging material field. Examiner notes Lovin et al. also teach final product (packaging material) that can withstand

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harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, rejection is maintained.

*G) There is no reason to incorporate Lovin' partial curing into Mossbrook. There is no reason to address problems which did not exist in the first instance. Moreover, incorporating that partial cure procedure into the Mossbrook method would not result in the claimed invention since it involves applying ink containing functionality onto the substrate. That is clearly unobvious since there is no apparent reason to subject an ink free of curable functionality into an energy curing system such as UV or EB.*

G) Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The instant application does not recite such limitation of ink without curable functionality as argued above. Both of the references are analogous art in packaging material field. Mossbrook et al. and Lovin et al. are analogous art in the packaging material field. Examiner notes pick-off and smearing is well-known problem in the packaging material field. Examiner notes Lovin et al. also teach final product (packaging material) that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, rejection is maintained.

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*H) The fact that such a possibility exists does not make it obvious that the packaging material has a specific solvent rub test result. Moreover, this additional reference does not cure any of the deficiencies in the combination of Mossbrook and Lovin and, therefore, these claims recite patentable subject matter. Further, the applicability of this rejection to claims 1 and 11, which do not recite a rub test result, is not apparent.*

H) Examiner respectfully disagrees. Mossbrook et al. in view of Lovin et al. disclose a printed thermoplastic film with an overprint varnish as a packing material and production process. Chatterjee et al. disclose a radiation curable aqueous composition for film packaging (abstract). These references are analogous art in packaging material field. Examiner notes the instant application recites that the packaging material has a degree of cure of at least 5 MEK rubs, 10 MEK rubs and 30 MEK rubs. Chatterjee et al disclose a radiation curable aqueous composition for film packaging wherein a solvent rub test is performed. The solvent test is performed on a flat surface using a solvent such as methyl ethyl ketone (MEK) and the cured film (column 7, lines 64-67). The cured film surface is rubbed repeatedly with an applicator containing the solvent with a back and forth motion. The film surface is rubbed a certain number of times to measure the resistance of the cured film. The film is considered solvent resistant when rubbed 10 or more times, or more preferably, 20 to 75 times before deterioration of the film is observed (column 8, lines 1-10). Therefore, it would have been obvious to one of ordinary skill within the art at the time of the invention to perform a solvent rub test using MEK as described by Chatterjee et al within the process and on the film of Mossbrook et al to measure the resistance of the film to a solvent. Therefore, rejection is maintained.

***Conclusion***

**9. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHANCEITY N. ROBINSON whose telephone number is (571)270-3786. The examiner can normally be reached on Monday to Thursday: 7:30 am-6:00 pm eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chanceity N Robinson/  
Examiner, Art Unit 1795

/Cynthia H Kelly/  
Supervisory Patent Examiner, Art Unit 1795